

# 가스 및 액체연료 난류확산화염의 $CH^*$ , $C_2^*$ 분포 계측

권민준\* · 이창엽\*\* · 김세원\*\*†

## Measurement of flame chemiluminescence on turbulent diffusion flame with gas & oil fuel

Minjun Kwon\*, Changyeop Lee\*\*, Sewon Kim\*\*†

### 화염 자발광 계측

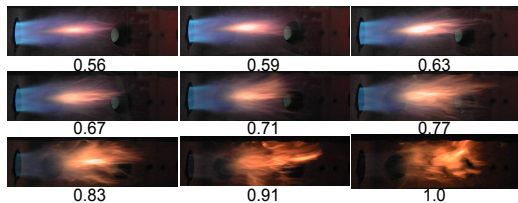


Fig. 1 Picture of Gas Flame for  $\Phi$

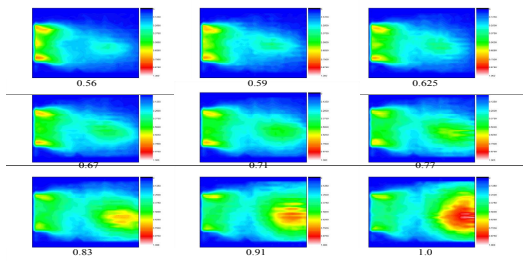


Fig. 2 Distribution of  $CH^*$  for each equivalence ratio at gas flame

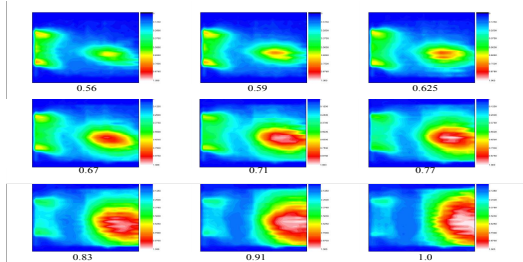


Fig. 3 Distribution of  $C_2^*$  for each equivalence ratio at gas flame

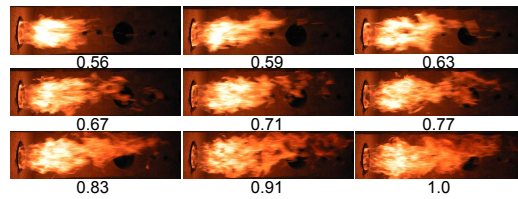


Fig. 4 Picture of Oil Flame for  $\Phi$

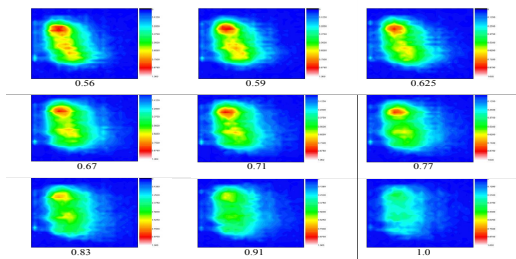


Fig. 5 Distribution of  $CH^*$  for each equivalence ratio at oil flame

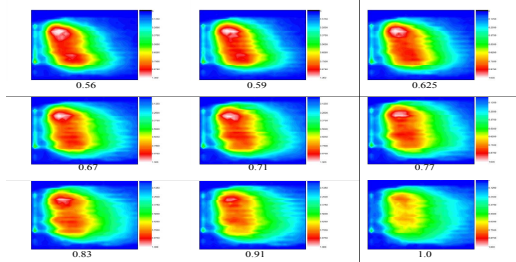


Fig. 6 Distribution of  $C_2^*$  for each equivalence ratio at oil flame

\* 한양대학교 기계공학과  
 \*\* 한국생산기술연구원  
 † 연락저자, swkim@kitech.re.kr  
 TEL : (041)589-8535 FAX : (041)-589-8323

본 가시화 사진은 Bandpass 필터와 CCD카메라를 이용한 화염라디칼 계측 분포를 나타낸 사진으로서 각각 가스 및 액체연료 확산화염에서의  $CH^*$ (413.5nm)와  $C_2^*$ (515nm)의 라디칼 분포를 나타낸다.

## 후 기

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## 참고 문헌

- [1] Y. Hardalupas., M. Orain., C. S. Panoutsos, A.M.K.P. Taylor, J. Olofsson, H. Seyfried, M. Richter, J. Hult, M. Alden, F. Hermann, J. Klingmann, 2004, "Chemiluminescence sensor for local equivalence ratio of reacting mixtures of fuel and air(FLAMESEEK)," Applied Thermal Engineering, Vol.24, pp. 1619~1632.
- [2] C. Romero., X. Li., S. Keyvan., R. Rossow., 2004, "Spectrometer-based Combustion Monitoring for Flame Stoichiometry and Temperature Control," Applied Thermal Engineering Vol. 25 pp. 659~676.